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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/821,803	04/08/2004	Bjorn-Oliver Eversmann	20195/0201131-US0	9052
7278	7590	12/29/2004	EXAMINER	
DARBY & DARBY P.C. P. O. BOX 5257 NEW YORK, NY 10150-5257			GABOR, OTILIA	
			ART UNIT	PAPER NUMBER
			2878	

DATE MAILED: 12/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/821,803

Applicant(s)

EVERSMANN ET AL.

Examiner

Otilia Gabor

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 08 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 26-48 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 26-48 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 10/22/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 26-48 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. Claims 26, 28, 29, 31, 33, 34, 35 provide for the use of a calibration device, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

4. Claim 35 provides for the use of the principle of correlated double sampling, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

5. The term "it is possible to apply" in claims 30 and 32 is a relative term, which renders the claims indefinite. The term "it is possible to apply" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the

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scope of the invention (it is unclear whether the claim requires that an electrical signal be applied to the gate of the calibration transistor or not).

6. Claim 35 recites the limitation "the principle of correlated double sampling" in lines 3-4. There is insufficient antecedent basis for this limitation in the claim.

7. Claims 40, 44, 45, 46 contain the relative term "and/or". This limitation makes it unclear whether both or only one of the enumerated elements is part of the claim as a positive limitation.

8. Claim 44 contains the unclear phrase "-coupled to the respectively associated row line and/or column line-". Having this phrase written in this way makes it unclear whether it is a positive limitation in the claim or it is just an explanatory sentence.

The rest of the claims are rejected as being dependent from a rejected claim.

### ***Claim Rejections - 35 USC § 102***

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 26-33, 35, 37, 39, 41, 42 are rejected under 35 U.S.C. 102(b) as being anticipated by Sohn (U. S. Patent 5,309,085).

Sohn discloses a biosensor circuit arrangement comprising a substrate (see Fig.3), a sensor element 30 (see Figs.1, 3) formed on a surface of the substrate (integrated circuit arrangement) with a physical parameter (threshold voltage), the

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sensor element is coupled to a substance S to be examined, the sensor element having an electrically conductive electrode 3 that is coupled to the substance S to be examined, the sensor element having a measuring transistor (ISFET) with a gate, source and drain terminal (see Fig.1) where the gate terminal is connected to the electrode 3, and a calibration device (reference transistor REFET) 20 formed on the substrate which is used to compensate for an alteration of the value of the physical parameter of the sensor element. The type of coupling between the sensor element and the substance is at least in part resistive since there is direct contact between the particles to be detected and the sensor electrode, but could be capacitive. The circuit arrangement further comprises a device (ENFET) 10 for detecting an electrical parameter characterizing an effected sensor event, the device being coupled to a drain/source of the measuring transistor. The calibration device is used to control the potential applied to the measuring transistors terminal of that it can set the sensor signal to a value, which is independent of the value of the physical parameter of the sensor element. The circuit arrangement also comprises an amplifier to amplify the signal (see Fig.4). The substrate is a silicon substrate (see Fig.1, as well as it is a typical material for forming integrated chips). The arrangement also comprises a first VD1, a second VD2, and a third VS1, (forth VD2) electrical potential sources coupled to the measuring transistor, as well as a constant-current source IS with the current mirror circuit whereby the current flows between the two transistors (measuring and calibration) (see Fig.4).

***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

13. Claims 34, 36, 40, 43-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sohn and further in view of Thewes (WO 01/75462 A1).

Sohn fails to disclose the array of biosensor elements and the corresponding connections as claimed, however, it would have been obvious to one having ordinary skill in the art to use the array and circuit arrangement of Thewes in order to efficiently detect different samples using one biosensor circuit. Thewes discloses that the sensor elements are positioned in an array in rows and columns, as well as the corresponding circuit connections with the claimed three current sources, the switching elements, and parallel connections (see Figs.10-17).

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14. Claim 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sohn and further in view of Krauss et al. (U. S. Patent 5,602,467).

Sohn fails to specifically disclose that the conductive electrode is made of gold, titanium, platinum or titanium nitride, however it would have been obvious to one of ordinary skill in the art at the time the invention was made to use gold or platinum, since as disclosed by Krauss, gold and platinum are good conducting and chemically resistant materials, qualities that are required for the conductor present in the arrangement of Sohn.

### ***Conclusion***

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Holm-Kennedy (5,466,348) – biochemical sensing; Sayler et al. (6,673,596) – biosensor apparatus; Simpson et al. (6,117,643) – integrated biosensor; Wu et al. (6,716,642) – integrated biosensor; Keen (6,326,215; 6,060,327; 6,699,667) – suture injection biosensors.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Otilia Gabor whose telephone number is 571-272-2435. The examiner can normally be reached on Monday, Thursday-Friday between 9am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta can be reached on 571-272-2444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Otilia Gabor  
Examiner  
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A handwritten signature in black ink, appearing to read "Otilia Gabor", written in a cursive style.